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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,020

06/15/2005

Jun Yamamoto

Q88367

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23373 7590 06/11/2008  
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EXAMINER

VADEN, KENNETH I

ART UNIT

PAPER NUMBER

4162

MAIL DATE

DELIVERY MODE

06/11/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,020	<b>Applicant(s)</b> YAMAMOTO, JUN	
	<b>Examiner</b> KENNETH VADEN	<b>Art Unit</b> 4162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on N/A is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/15/2005</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 9 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6323147. Although the conflicting claims are not identical, they are not patentably distinct from each other

because the catalyst obtained by the process according to claim 1 is encompassed by the catalyst as claimed in claim 1 of U.S. Patent Number 6323147.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 are rejected under U.S.C. 102 (b) as being unpatentable over Yamamoto et al. (US 6,323,147).

Regarding claim 1, Yamamoto “147” teaches the process for producing a titanium containing silicon oxide catalyst (Col. 8, lines 42-60) with an average pore diameter for the catalyst material of 10 Å or more, a pore size of 90% or more of the total pore volume of 5 to 200 Å, a specific pore size of 90% or more, a specific pore volume of 0.2 cm<sup>3</sup>/g or more and a quaternary ammonia ion represented by the formula: [NR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>R<sub>4</sub>]<sup>+</sup> where R<sub>1</sub> represents a linear or branched hydrocarbon chain having 10 to 36 carbon atoms, and R<sub>2</sub> and R<sub>4</sub> represent an alkyl group having 1 to 6 carbon atoms.

Regarding the first step of claim 1, Yamamoto “147” teaches obtaining a solid containing a catalyst component and a template by mixing and stirring a silica source, a titanium source and a quaternary ammonia ion as a template in a liquid state (Col 8, lines 64 –67 and Col. 9, lines 1-2). Regarding step two of claim 1, the component

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(solid) is removed from the template using a solvent extraction (Col. 9, lines 4-5).

Regarding step three of claim 1, Yamamoto "147" teaches mixing the solid with hexamethyldisilazane and toluene to form a mixture, which corresponds to the claimed step of substituting the solvent used for the extraction which was contained in the solid after the removal of the template, with a solvent which is substantially inert to a silylating agent (Col. 7, lines 47-50). Regarding step four, Yamamoto "147" teaches heating the mixture for one hour under reflux with stirring and removing the liquid, which corresponds to the step of obtaining a silylated catalyst by subjecting the solid to the procedure of step three. (Col 7, lines 47-48).

Regarding claim 2, Yamamoto "147" further teaches washing with toluene which is the same solvent as used in step three (Col. 7, line 51).

Regarding claim 3, Yamamoto "147" teaches the use of a template which a quaternary ammonium ion of the general formula  $[NR_1R_2R_3R_4]^+$ , where  $R_1$  is a linear to branched hydrocarbon chain having 10 to 36 carbon atoms, and  $R_2$  and  $R_4$  represent an alkyl group having 1 to 6 carbon atoms (Col. 10, lines 1-7).

Regarding claim 4, Yamamoto "147" teaches the process of molding the solid containing the catalyst component (Col. 7, lines 45-52).

Regarding claim 5 and 6, Yamamoto "147" teaches the use of an alcohol for extraction. (Col. 7, lines 39-43). One of the preferred alcohols for this purpose is methanol (Col. 3, line 33-37).

Regarding claims 7 and 8, Yamamoto "147" teaches the use of a hydrocarbon such as toluene for substitution (Col. 7, lines 30-55).

Regarding claim 9, Yamamoto "147" teaches obtaining of a titanium-containing silicon oxide catalyst (Col. 7, lines 42-63).

Regarding claim 10, Yamamoto "147" teaches production of an oxirane compound resulting from the reaction of an olefin compound with an organic hydroperoxide in the presence of the catalyst (Col. 6, lines 1-3).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH VADEN whose telephone number is (571)270-5824. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Mc Neill can be reached on 571 272 1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KV

June 6, 2008

/Melvin C. Mayes/

Primary Examiner, Art Unit 1791